



Practical Research Capability of the Senior High School Students in the Philippine Setting

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ABSTRACT

This study centered on the practical research skills of Grade 11 Senior High School students of all tracks in Quezon province. The descriptive-evaluative design was utilized, and results revealed that out of the fourteen practical research skills needed by the respondents in conducting quality and relevant research, the lowest weighted arithmetic mean were reviewing literature and studies, formulating research questions and studies, determining the variables to be measured, choosing an appropriate research design, determining a sample and collecting and coding the data. With average mastery on writing a good research title, deciding on scope and limitation, adopting a theoretical framework or conceptual framework, interpreting data, writing the research report, making citations, and writing final references. These results gave the researchers an idea that the Grade 11 SHS learners had prior research skills mastery which gave the impression that they are ready to cope with the demands of the SHS curriculum in research have to be strengthened and enhanced in order to cope with the challenges. The researchers recommended the use of an intervention material developed from this study to gain greater awareness on improving research skills with low mastery and conduct an assessment also to all SHS students from all tracks.

Keywords: Assessment, Intervention Material, Practical Research, Research Skills, Senior Highschool

INTRODUCTION

The Department of Education, through the National Educational Testing and Research Council (2011) has found that the previous curricula did not become much helpful in creating competitive citizens as the competencies are still unified and not differentiated based on the skills of the learners. As part of the recommendation for educational reform, the K to 12 Basic Education Program under RA No. 10533 was conceptualized and implemented. The aim is to provide enhanced basic education programs by strengthening teaching and learning strategies and concepts, adding more years in high school, and strengthening the curriculum to develop life-long learners equipped with skills necessary to be globally competitive citizens.

In the K to 12 Basic Education Program, Senior High School (SHS) is two years to consolidate academic skills, competencies, and allow in-depth specialization for students depending on the occupation or career track they wish to pursue relevant to the market. The choice of career track will define the content of the subjects a student will take in Grades 11 and 12. SHS is composed of the Core Curriculum and Applied Track Subjects in which the curriculum shall be relevant, responsive, and research-based. Practical Research 1 is one of an applied track subjects in Grade 11 that responds to the features of the new curriculum in gearing up and nurturing a holistically developed learners who have 21st century skills. It cultivates among learner's capability and skill in the field of qualitative research and teach them to use these basic skills in making decisions and solving problems (K to 12 Applied Track Subject – Practical Research 1, 2013).

When the Department of Education (DepED) added this new course to the senior high program, it comes with some challenges. First, the Philippines higher education has been predominantly focused on quantitative research like theses, dissertations, and even research publications. Second, because of the dominance of quantitative research in higher education institutions, many teachers in K-12 were not trained in qualitative research and lastly, there is an extremely high lack of K-12 textbooks on qualitative research. This is explained by the fact that it is a new subject being offered in the Philippines and there are very few experts on qualitative research (Wa-Mbaleka, 2018).

Programs based on mastery learning concepts are used today at all levels of education from the earliest elementary grades to graduate and professional schools. Although these programs vary widely in their format, they are all tied to a specific theory about the teaching and learning process and an accompanying set of instructional strategies. The theory of mastery learning is based on the simple belief that all learners can learn when provided with conditions that are

appropriate for their learning. The instructional strategies associated with mastery learning are designed to put that belief into practice in modern classrooms. Current applications of mastery learning are generally based on Bloom's Learning for Mastery model.

Practical Research 1 also features the following content from the curriculum guide namely: Nature of inquiry and research, Qualitative research and its importance in daily life, Identifying the inquiry and stating the problem, understanding data and ways to systematically collect data, Analyzing the meaning of the data, drawing conclusions and reporting and sharing the findings.

The content standards for Practical Research 1 are: the importance of research in daily life, the characteristics, processes, and ethics of research, quantitative and qualitative research, the kinds of research across fields, the value of qualitative research; its kinds, characteristics, uses, strengths, and weaknesses, the range of research topics in the area of inquiry, the value of research in the area of interest, the specificity and feasibility of the problem posed, the criteria in selecting, citing, and synthesizing related literature and ethical standards in writing,

On the other hand, the performance standards for Practical Research 1 are: use appropriate kinds of research in making decisions, decide on suitable qualitative research in different areas of interest, formulate clearly statement of research problem, select, cite, and synthesize properly related literature, use sources according to ethical standards, describe qualitative research designs, sample, data collection and analysis procedures, apply imaginatively art/design principles to create artwork, form logical conclusions, make recommendations based on conclusions, write and present a clear report and execute best design. (K to 12 SHS Applied Track Curriculum – Practical Research 1, 2013).

According to Wa-Mbaleka and Gladstone (2018), with the implementation of Senior High School, many encountered struggles in terms of teaching and learning Practical Research 1. Many of the teachers were struggling because they are not trained, they do not have the experience teaching or conducting qualitative research, and they do not have access to qualitative research instructional materials fit for the senior high school learners. Moreover, Prabha (2010) cited that research requires a careful and systematic planning to arrive at accurate and beneficial results. It is a key to progress in determining the problems in school setting and its possible solutions.

With the challenges above, the researchers came up with the idea of assessing the practical research capability of the SHS students in Quezon Province to find out their prior Practical Research skills. This study paved the way to produce an Intervention Material among Senior High School students to be embedded in their Practical Research subjects to develop and improve skills in conducting relevant research.

Research Objectives

This study assessed the practical research capability of the Grade 11 Senior High School students in Quezon Province on the following:

1.1.1 determine the mastery level in conducting research in terms of:

1.1.1.1 Writing a good research title;

1.1.1.2 Reviewing the literature studies;

1.1.1.3. Formulating research questions/objective;

1.1.1.4. Determining the variables to be measured;

1.1.1.5. Deciding on scope and limitation;

1.1.1.6. Adopting theoretical framework or conceptual framework;

1.1.1.7. Choosing appropriate research design;

1.1.1.8. Selecting and determining a sample;

1.1.1.9. Collecting and coding the data;

1.1.1.10. Choosing and using appropriate statistical tool;

1.1.1.11. Interpreting Data;

1.1.1.12. Writing the research report;

1.1.1.13. Making citation; and

1.1.1.14. Writing the final references.

1.1.2 develop the intervention material on research skills can be produced to guide students in conducting and writing research.

METHODOLOGY

The researchers used the descriptive-evaluative method. This study measured and described data on the practical research skills mastery of the Grade 11 SHS learners in Quezon Province. The data collected was the basis in developing an intervention material to develop the skills of the learners in conducting relevant research.

The study was conducted in one of the SHS in Quezon Province with a population of 912 students, 36 teaching personnel and 3 non-teaching personnel. This school offers the complete high school of K-12 Secondary Education with an academic track of General Academic Strand and Technological Vocational and Livelihood wherein students from both fields acquired quality education.

The respondents of this research were all Grade 11 SHS students of Quezon province. For school year 2017-2018, the total number of students in Grade 11 is 94. Seven (7) of the ninety-four students were absent during the conduct of the study that is why the total number of respondents was 87.

The researchers utilized an adopted self-devised questionnaire of Parentela (2017) as a tool of the study. The researchers were granted the permit to utilize the said research instrument. The questionnaire contained series of questions that aimed to determine the needs of the respondents on the different research skills to enhance or improve their research skills. The Practical Research Skills include the following: (A) writing a good research title, (B) reviewing the literature studies, (C) formulating research questions/objectives, (D) determining the variables to be measured, (E) deciding on scope and limitation, (F) adopting theoretical framework or conceptual framework, (G) choosing appropriate research design, (H) selecting/determining a sample, (I) collecting and coding the data, (J) choosing/using appropriate statistical tool, (K) interpreting data, (L) writing the research report, (M) making citations, and (N) writing the final references. The gathered data were interpreted by using the qualitative index assigned on each scale.

The researchers considered the following steps in gathering the data. Upon the approval of the proposal, the researcher gathered the necessary materials needed in the study. Data gathering was done in of the SHS in Quezon province. Researchers asked permission from the concerned individuals namely the Schools Division Superintendent, the School Head, Senior High School teachers, and Grade 11 students. A request letter was personally given to the concerned head of office. The researchers formally asked permission to Parentela to utilize her validated research instrument as a tool in the study. After the approval, the researchers personally distributed the instrument to the respondents which was analyzed and interpreted.

The completion of this study was deeply reliant on the statistical tool. Data from the questionnaire was used to answer the statement of the problem of the study using the appropriate statistical treatment. After the administration of the questionnaire, the results were recorded, tabulated and analyzed with the use of appropriate statistical tool. The responses of the respondents were classified.

Frequency – percentage distribution was used to determine the research skills mastery of the respondents in conducting research.

To compute for the percentage distribution of the respondents, the researcher used the formula shown below:

$$P = \frac{f}{N} \times 100$$

where: P is the simple percentage

f is the frequency

N is the total number of the respondents

To arrive at a definite interpretation of the results for each variable, the table with the qualitative index was assigned on each scale.

Descriptive Scale with Continuum

(Qualitative Description for the Research Skills Mastery)

Continuum	Qualitative Index
96 - 100%	Mastered
86 - 95%	closely approximately mastery
66 – 85%	moving toward mastery
35 – 65%	average mastery
15 - 34%	low mastery
5 – 14%	very low mastery
0 – 4%	absolutely no mastery

Source: SHC Statistical Guide Revised Edition, 2018

RESULTS AND DISCUSSION

The data are presented in tabular form. Tables are logically arranged in accordance with the order of the statement of the sub-problems in the chapter 1 of the study.

Part I – Research Skills Mastery of the Respondents in Conducting Research

Table 1 Research Skills Mastery of the Respondents in Terms of Writing a Good Research Title

No.	Indicator	No. of Respondents who got the correct answer	Percentage	Qualitative Index
1.	Factors to consider in writing a good research title	16	18.39	Low mastery
2.	Sources of a research problem	69	79.31	Moving toward mastery
3.	Characteristic of a good research title	15	17.24	Low mastery
4.	Characteristic of a good research title	42	48.28	Average mastery
5.	Example of a good research title	62	71.26	Moving toward mastery
Average			46.90	Average mastery

Table 1 presents the research skills mastery of the respondents in terms of writing a good research title. It can be seen that indicators of sources of a research problem and example of a good research title with 69 and 62 respondents answered correctly with the percentage of 79.31 and 71.26 respectively. It shows that respondents are moving towards mastery of writing a good research title.

Meanwhile, for the characteristic of a good research title with 42 respondents answered correctly with 48.28 percent which shows that respondents had an average mastery of writing a good research title. This was followed by the factors to consider in writing a good research title with 16 or 18.39 percent and the characteristic of a good research title with 15 or 17.24 percent respondents had low mastery of writing a good research title.

In all, with 46.90 percent, it could be gleaned that respondents had an average mastery of writing a good research title. This only means that the Grade 11 learners in Quezon Province can write a good research title but needs to enhance the research skills on finding the sources of a research problem and the characteristics of a good title.

According to Brown (2013), writing a good research title is the first skill that must be mastered by each researcher. A good research title predicts the content of the research paper, interesting to the reader, reflects the tone of the writing, and should contain important keywords that will make it easier to be located during a keyword search for this serve as the heart of the research work. Without it, the research track may be misguided and mislead.

Table 2 Research Skills Mastery of the Respondents in Terms of Reviewing Literature and Studies

No.	Indicator	No. of Respondents who got the correct answer	Percentage	Qualitative Index
6.	Concept of reviewing literature and studies	63	72.41	Moving toward mastery
7.	Importance of reviewing literature/studies	26	29.89	Low mastery
8.	Systematic literature review	16	18.39	Low mastery
9.	Framework of literature review	28	32.18	Low mastery
10.	Importance of literature review in formulating research questions.	17	19.54	Low mastery
Average			34.48	Low mastery

Table 2 presents the research skills mastery of the respondents in terms of reviewing literature and studies. Indicator with the concept of reviewing literature and studies with 63 or 72.41 percent respondents answered that they were moving toward mastery in reviewing literature and studies.

Meanwhile, for indicators of the framework of literature review with 28 or 32.18 percent; importance of reviewing literature/studies with 26 or 29.89 percent, importance of literature review in formulating research questions with 17 or 19.54 percent and systematic literature review with 16 or 18.39 percent showed that respondents had low mastery of reviewing literature and studies.

In all, with 34.48 percent, it could be gleaned that respondents had low mastery in reviewing literature and studies. This only means that the Grade 11 learners of Pagbilao Grande Island National High School lack the research skills in connecting the review of literature studies in relation of each work within the context of existing literature.

Fordew (2010), stated that the related literature and studies are important concepts and features of a research paper. This section provides the supporting ideas and claims that will help in strengthening the claims of the research.

Table 3 Research Skills Mastery of the Respondents in Terms of Formulating Research Questions or Objectives

No.	Indicator	No. of Respondents who got the correct answer	Percentage	Qualitative Index
11.	Characteristics of a good research problem	18	20.69	Low mastery
12.	Statement of purpose in a research study	44	50.57	Average mastery
13.	Importance of a good statement of quantitative research questions	34	39.08	Average mastery
14.	Formal statement of a research question	18	20.69	Low mastery
15.	Sequence of quantitative research question	32	36.78	Average mastery
Average			33.56	Low mastery

Table 3 presents the research skills mastery of the respondents in terms of formulating research questions or objectives. Indicator of the statement of purpose in a research study with 44 or 50.57 percent respondents answered correctly with an average mastery of formulating research questions or objectives. This was followed by the importance of a good statement of quantitative research questions with 34 or 39.08 percent and sequence of quantitative research question with 32 or 36.78 percent respondents had an average mastery of formulating research questions or objectives.

Meanwhile, indicators of the characteristics of a good research problem and formal statement of a research question both with 18 respondents answered correctly with 20.69 percent which showed that respondents had low mastery of formulating research questions or objectives.

In all, with 33.56 percent, it was identified that the respondents had low mastery of formulating research questions or objectives. This only means that the Grade 11 learners of Pagbilao Grande Island National High School find it difficult to formulate research questions or objectives of a research work because they find it hard to state the specific issue or problem that they would like to focus on their research. According to Thomas (2011), this part should be properly orchestrated and developed to clearly see the flow of the research work. The formulation of the research questions and objectives are considered the most difficult part on the initialization of the research work for it states the specific issue or problem that your assignment will focus on. It also outlines the task that you will need to complete.

Table 4 Research Skills Mastery of the Respondents in Terms of Determining the Variables to be Measured

No.	Indicator	No. of Respondents who got the correct answer	Percentage	Qualitative Index
16.	Types of quantitative variables	20	22.99	Low mastery
17.	Opposite of a variable	18	20.69	Low mastery
18.	Definition of independent variable	32	36.78	Average mastery
19.	Mutually exclusive variables	32	36.78	Average mastery
20.	Identifying independent variable	33	37.93	Average mastery
Average			31.03	Low mastery

Table 4 presents the research skills mastery of the respondents in terms of determining the variables to be measured. For the indicator of identifying independent variable with 33 or 37.93 percent respondents answered correctly the questions with an average mastery of determining the variables to be measured. This was followed by the definition of independent variable and mutually exclusive variables both with 32 or 36.78 percent respondents who answered with an average mastery of determining the variables to be measured.

Meanwhile, indicators of the types of quantitative variables with 20 or 22.99 percent and opposite of a variable with 18 or 20.69 percent showed that respondents had low mastery in determining the variables to be measured.

In all, with 31.03 percent, it could be gleaned that the respondents had low mastery in determining the variables to be measured. This only means that the Grade 11 learners in Quezon Province find it hard to determine the different types of variables that are applicable in a specific study.

Del Monte (2010) stated that if one can understand the elements in the problem, one can clearly portray and show the flow of the research work. It is important that a researcher understands and determines the variables to be measured.

Table 5 Research Skills Mastery of the Respondents in Terms of Deciding on Scope and Limitation

No.	Indicator	No. of Respondents who got the correct answer	Percentage	Qualitative Index
21.	Factors that affect the validity of the study	39	44.83	Average mastery
22.	Description of scope and limitation	27	31.03	Low mastery
23.	Concept about scope and limitation	69	79.31	Moving toward mastery
24.	Example of scope and limitation	10	11.49	Very low mastery
25.	External validity of a study	16	18.39	Low mastery
Average			37.01	Average mastery

Table 5 presents the research skills mastery of the respondents in terms of deciding on scope and limitation. For the indicator of concept about scope and limitation with 69 or 79.31 percent respondents answered correctly moving towards mastery of deciding on scope and limitation. This was followed by the factors that affect the validity of the study with 39 or 44.83 percent which showed that respondents had an average mastery of deciding on scope and limitation.

Meanwhile, indicators of the description of scope and limitation with 27 or 31.03 and external validity of a study with 16 or 18.39 percent respondents had low mastery of deciding on scope and limitation.

In all, 37.01 percent was identified that respondents had an average mastery of deciding on scope and limitation. In research, the scope defines the problem or subject that a researcher plans to study while limitations are factors that the researcher encounters that inadvertently narrow the scope of the study. Scope and limitations show the boundaries of the research work. This also serves as the guide on what to do, and what to expect in the course of the entire process (Custodio, 2013).

Table 6 Research Skills Mastery of the Respondents in Terms of Adopting Theoretical and Conceptual Framework

No.	Indicator	No. of Respondents who got the correct answer	Percentage	Qualitative Index
26.	Definition of conceptual framework	45	51.72	Average mastery
27.	Definition of theoretical framework	44	50.57	Average mastery
28.	Characteristic of a conceptual framework	28	32.18	Low mastery
29.	Types of diagram	66	75.86	Moving toward mastery
30.	Discussion of the concept	25	28.74	Low mastery
Average			47.82	Average mastery

Table 6 presents the research skills mastery of the respondents in terms of adopting theoretical framework or conceptual framework. It could be seen that indicator on the types of diagram with 66 or 75.86 percent respondents answered correctly moving towards mastery of adopting theoretical framework or conceptual framework. This was followed by the definition of conceptual framework with 45 or 51.72 percent and definition of theoretical framework with 44 or 50.57 percent which showed that respondents had an average mastery of adopting theoretical framework or conceptual framework.

Meanwhile, indicators on the characteristic of a conceptual framework with 28 or 32.18 percent and discussion of the concept with 25 or 28.74 percent, respondents had low mastery of adopting theoretical or conceptual framework.

In all, 47.82 percent was identified that respondents had an average mastery of adopting theoretical or conceptual framework. This only means that Grade 11 students in Quezon Province have the research skills in using appropriate theoretical or conceptual framework needed in the study and this could still be further improved.

As McGaghieet *al.* (2011) put it: The conceptual framework “sets the stage” for the presentation of the research question that drives the investigation being reported based on the problem statement. The problem statement of a thesis presents the context and the issues that caused the researcher to conduct the study. More so, the conceptual framework shows the conceptual flow of the study. This creates a picture on the connection of ideas and variables involved in the research study as shown through figures.

Table 7 Research Skills Mastery of the Respondents in Terms of Choosing Appropriate Research Design

No.	Indicator	No. of Respondents who got the correct answer	Percentage	Qualitative Index
31.	Definition of research design	27	31.03	Low mastery
32.	Type of research	47	54.02	Average mastery
33.	Characteristic of a good problem statement	31	35.63	Average mastery
34.	Definition of research design	18	20.69	Low mastery
35.	Concept of research design	26	29.89	Low mastery
Average			34.25	Low mastery

Table 7 presents the research skills mastery of the respondents in terms of choosing appropriate research design. For indicators of the type of research with 47 or 54.02 percent and characteristic of a good problem statement with 31 or 35.63 percent respondents answered correctly with an average mastery in choosing appropriate research design. This was followed by the definition of research design with 27 or 31.03 percent, concept of research design with 26 or 29.89 percent and example of research design with 18 or 20.69 percent which showed that respondents had low mastery in choosing appropriate research design.

In all, 34.25 percent was identified that respondents had low mastery in choosing appropriate research design. This only means that Grade 11 students of Quezon Province lack the research skills in choosing the appropriate research design that will address the research problem of the study.

As cited by Pando (2011), choosing appropriate design is another difficult task in research writing. This involves the task of identifying the research variables necessary to understand the connection of such variables in the identification of appropriate design

Table 8 Research Skills Mastery of the Respondents in Terms of Selecting and Determining a Sample

No.	Indicator	No. of Respondents who got the correct answer	Percentage	Qualitative Index
36.	Example of random sampling	15	17.24	Low mastery
37.	Example of a simple random sampling	18	20.69	Low mastery
38.	Characteristic of a sample	22	25.29	Low mastery
39.	Types of random sampling	22	25.29	Low mastery
40.	Types of non-random sampling	15	17.24	Low mastery
Average			21.15	Low mastery

Table 8 presents the research skills mastery of the respondents in terms of selecting or determining a sample. It could be seen that indicators of the characteristic of a sample with 22 and types of random sampling with 22 respondents

answered correctly with both 25.29 percent. It showed that respondents had low mastery in selecting or determining a sample. This was followed by indicator of an example of a simple random sampling with 18 or 20.69 percent respondents who also got low mastery of selecting or determining a sample.

Meanwhile, for indicators of example of random sampling and types of non-random sampling with both 15 respondents correctly answered the questions with the same percentage of 17.24, which showed that respondents had low mastery of selecting and determining a sample.

In all, with 46.90 percent, it could be gleaned that the respondents had low mastery of selecting and determining a sample. This only means that the Grade 11 learners of Quezon Province lack the research skills in identifying and determining respondents and the type of sampling to be used in a study. Paris (2013), stated that research sample is an important research context as it focuses on the methods or process of selecting respondents or people to answer the questions meant to yield for a research data.

Table 9 Research Skills Mastery of the Respondents in Terms of Collecting and Coding the Data

No.	Indicator	No. of Respondents who got the correct answer	Percentage	Qualitative Index
41.	Method of data collection	17	19.54	Low mastery
42.	Types of data	25	28.74	Low mastery
43.	Characteristics of a data	20	22.99	Low mastery
44.	Method of data collection	16	18.39	Low mastery
45.	Types of participants	30	34.48	Low mastery
Average			21.60	Low mastery

Table 9 presents the research skills mastery of the respondents in terms of collecting and coding the data. For indicators on types of participants with 30 or 34.48 percent, types of data with 25 or 28.74 percent, characteristics of a data with 20 or 22.99 percent, Characteristics of a data with 17 or 10.54 percent, and method of data collection with 16 or 18.39 percent respondents had low mastery of selecting and determining a sample.

In all, with 21.60 percent, it could be gleaned that respondents had low mastery of collecting and coding the data. This only means that most of the Grade 11 students of Quezon Province lack research skills in collecting and coding the data and this could be in the context of explaining the gathered data because it involves interpretation and analysis.

According to Bermudo (2014), the data collection involves the process of explaining the ways on how the research will gather relevant information anchored to the process of collecting and analyzing the processes indicated in the context of research work. Data collection is necessary to address the problems or the objectives of the study.

Table 10 Research Skills Mastery of the Respondents in Terms of Choosing/Using Appropriate Statistical Tool

No.	Indicator	No. of Respondents who got the correct answer	Percentage	Qualitative Index
46.	Measure of central tendency	28	32.18	Low mastery
47.	Types of statistical test	29	33.33	Low mastery
48.	Types of statistical test	33	37.93	Average mastery
49.	Measure of central tendency	57	65.52	Moving toward mastery
50.	Statistical tool formula	17	19.54	Low mastery
Average			32.80	Low mastery

Table 10 presents the research skills mastery of the respondents in terms of choosing appropriate research tool. It could be seen that the indicator of a measure of central tendency with 57 or 65.52 percent, respondents answered that they were moving toward mastery in choosing appropriate research tool. This was followed by the types of statistical test with 33 or 37.93 percent which showed that respondents had an average mastery of choosing appropriate research tool. Meanwhile, based on types of statistical test with 29 or 33.33 percent, measure of central tendency with 28 or 32.18 percent and statistical tool formula with 17 or 19.54 percents, respondents showed that they had low mastery of choosing appropriate research tool.

In all, 32.80 percent was identified that the respondents had low mastery in choosing appropriate research tool. This only means that Grade 11 students of Quezon Province find it difficult to choose what appropriate statistical treatment is applicable to use in a research study.

It is necessary to apply statistical treatment especially in dealing with quantitative research. Applying the statistical treatment is one of the most difficult parts of writing a research paper or article (Fernz, 2012). This involves better mathematical skills and analysis on the different data gathered, collected, and coded.

Table 11 Research Skills Mastery of the Respondents in Terms of Interpreting data

No.	Indicator	No. of Respondents who got the correct answer	Percentage	Qualitative Index
51.	Interpreting the data	65	74.71	Moving toward mastery
52.	Comparing correlations	45	51.72	Average mastery
53.	Example of interpreting data	15	17.24	Low mastery
54.	Hypothesis testing	55	63.22	Average mastery
55.	Example of a null hypothesis	57	65.52	Moving toward mastery
Average			47.40	Average mastery

Table 11 presents the research skills mastery of the respondents in terms of interpreting data. Indicators of interpreting the data with 65 or 74.71 percent and example of a null hypothesis with 57 or 65.52 percent, respondents answered that they were moving toward mastery of interpreting data. This was followed by indicators on the hypothesis testing with 55 or 63.22 percent and comparing correlations with 45 or 51.72 percent which showed that respondents had an average mastery of interpreting data.

Meanwhile, based on the example of interpreting data with 15 or 17.24 percent respondents had low mastery of interpreting the data. In all, with 47.40 percent, it was identified that respondents had an average mastery of interpreting the data. This only means that Grade 11 of Quezon Province has the research skills to identify the different types of graphs in data interpretation but need to enhance more of this skill.

The concept of data interpretation is important in understanding the target concepts of the collected data. Data have to be interpreted after they are collected, coded and statistically treated (Reyes, 2015).

Table 12 Research Skills Mastery of the Respondents in Terms of Writing the Research Report

No.	Indicator	No. of Respondents who got the correct answer	Percentage	Qualitative Index
56.	Rules in writing a research report	32	34.48	Low mastery
57.	Sources of research report	34	39.08	Average mastery
58.	Part of a research report	51	58.62	Average mastery
59.	Components of research report	43	49.43	Average mastery
60.	Abstract writing	13	13.79	Very low mastery
Average			39.08	Average mastery

Table 12 presents the research skills mastery of the respondents in terms of writing a research report. It could be seen that indicators on the part of a research report with 51 or 58.62 percent, components of research report with 43 or 49.43 percent and sources of research report with 34 or 39.08 percent, respondents answered that they had an average mastery of writing a research report. This was followed by the rules in writing a research report with 32 or 34.38 percent respondents.

Meanwhile, based on the abstract writing with 15 or 17.24 percent respondents had low mastery of writing a research report. In all, with 47.40 percent, it was identified that respondents had an average mastery of writing a research report. This only means that Grade 11 of Quezon Province has the research skills in writing a research report because they can identify the different components of a research report and can apply the rules in research writing. Fonders (2012), stated that writing a research report focuses on the finality of the research paper focusing on the overall impact and procedures of the research paper.

Table 13 Research Skills Mastery of the Respondents in Terms of Making Citation

No.	Indicator	No. of Respondents who got the correct answer	Percentage	Qualitative Index
61.	Concept of citation	49	56.32	Average mastery
62.	Concept of Plagiarism	55	63.22	Average mastery
63.	APA (American Psychological Association) format	26	29.89	Low mastery
64.	Example of citing a direct quote	20	22.99	Low mastery
65.	Guidelines in writing citations	44	50.57	Average mastery
Average			44.60	Average mastery

Table 13 presents the research skills mastery of the respondents in terms of making citation

Indicators on the concept of plagiarism with 55 or 63.22 percent, concept of citation with 56.32 percent, and guidelines in writing citations with 44 or 50.57 percent, respondents answered that they had an average mastery of making citation. This was followed by indicators of APA (American Psychological Association) format with 26 or 29.89 percent and an example of citing a direct quote with 20 or 22.99 percent showed that respondents had low mastery of making citation.

In all, with 44.60 percent, it was identified that respondents had an average mastery of making citations. This only means that Grade 11 of Quezon Province has the knowledge on how to identify and write citations in a study using the American Psychological Association format but must be understood and mastered by researchers.

According to the American Psychological Association (APA, 2014), working well on the citation is necessary to avoid plagiarism and merely copying of ideas and contexts of particular authors. The skill of citation must be carefully mastered and understood by all researchers.

Table 14 Research Skills Mastery of the Respondents in Terms of Writing Final References

No.	Indicator	No. of Respondents who got the correct answer	Percentage	Qualitative Index
66.	Rules in writing references	10	11.49	Very low mastery
67.	Reference listing	60	68.97	Moving toward mastery
68.	Rules in writing references	52	59.77	Average mastery
69.	Example of APA format	27	31.03	Low mastery
70.	Using web references	60	68.97	Moving toward mastery
Average			48.05	Average mastery

Table 14 presents the research skills mastery of the respondents in terms of writing the final references. It can be seen that indicators on reference listing and using web references, both with 60 or 68.97 percent respondents, answered that they were moving toward mastery of writing the final references. This was followed by rules in writing references with 52 or 59.77 percent respondents with an average mastery of writing final references, and an example of APA format with 27 or 31.03 percent which showed that respondents had low mastery of writing the final references.

In all, with 48.05 percent, it was identified that Example of APA format respondents had an average mastery of writing the references.

This only means that Grade 11 of Quezon Province are aware of the guidelines in terms of writing final references. As cited by the American Psychological Association (APA, (2014), working well on the citations through the final references is necessary to avoid plagiarism and merely copying of ideas and contexts of particular author.

The researcher has to be very careful in referencing the identity of the original authors being cited. The skill of referencing must be carefully mastered and understood by all researchers.

Table 15 Summary of Research Skills Mastery of Grade 11

Research Skills	Total Percentage	Qualitative Index
Writing a Good Research Title	46.90	Average Mastery
Reviewing Literature and Studies	34.48	Low Mastery
Formulating Research Question	33.56	Low Mastery
Determining the Variables to be Measured	31.03	Low Mastery
Deciding on Scope and Limitation	37.01	Average Mastery
Adopting Theoretical Framework or Conceptual Framework	47.82	Average Mastery
Choosing Appropriate Research Design	34.25	Low Mastery
Selecting and Determining a Sample	21.15	Low Mastery
Collection and Coding a Data	21.60	Low Mastery
Choosing and Using Appropriate Research Tool	32.80	Low Mastery
Interpreting Data	47.40	Average Mastery
Writing the Research Report	39.08	Average Mastery
Making Citation	44.60	Average Mastery
Final References	48.05	Average Mastery

Table 15 reveals the summary of the average percentage of each research skill of Grade 11 Senior High School Learners. The average percentage of each research skill was obtained by adding the mean percentage score of each question in each research skill and divided by the total number of items of each skill. The interpretation of the result for each variable was interpreted based on the qualitative index assigned on each scale.

Part II – Practical Research Module for Grade 11 Students

The output of the study is a Practical Research Intervention Material for Senior High School students. This intervention material will be a tool to be used to enhance their research skills in conducting quality and relevant research based on the least mastered skills such as: reviewing literature and studies, formulating research questions and objectives, determining the variables to be measured, choosing appropriate designs, selecting or determining a sample, collecting and coding the data and choosing and using appropriate research tool.

It features the following content aligned on the Practical Research 1 curriculum guide namely: Nature of inquiry and research, Qualitative research and its importance in daily life, Identifying the inquiry and stating the problem, understanding data and ways to systematically collect data, Analyzing the meaning of the data, drawing conclusions, and reporting and sharing the findings.

This intervention material is designed for independent study where sample tasks are provided and answers are given at the last part of each learning activity. There is a preliminary discussion of each learning activity to guide the learner on how to use this material. This will be a big help to enhance one's research skills.

CONCLUSIONS

After summarizing the findings, the following conclusions were formulated.

1. Prior research skills mastery is evident among Grade 11 students which gave an impression that they are ready to cope with the demands of the Senior High School curriculum but needs to strengthen and enhance the research skills with low mastery.
2. The output of the study which is an Intervention Material on research skills will be of great help not only for Grade 11 learners but to all Senior High School learners to develop and enhance their skills in conducting relevant research.

REFERENCES

- [1]. American Psychological Association {APA}. (2014). The APA format (6th ed.). United States of America; APA Publications.
- [2]. Bermudo, A. (2014). The Process of Research and Data Collection. Manila: La Salle Press.
- [3]. Brown, V. (2012). The Process of Research Writing. USA: San Carlos Press.
- [4]. Custodio, N. (2013). Understanding Research. Philippines: UP Press.
- [5]. Del Monte, A. (2010). Understanding Measurement of Research and Variables. Philippines: Bataan Peninsula State University.

- [6]. Del Moro, F. (2010). Enhancing Research Skills in Conducting Research Among the Teachers of Alabat Island (Master's Thesis: Laguna State Polytechnic University).
- [7]. Department of Education (2015). The K to 12 Senior High School Curriculum. Retrieved from <http://fape.org.ph/addons/tinymce/editor/media/PEC2015/Speakers/SHS%20Challenge%20Managing%20Exits%20and%20Outcomes%20that%20Achieve%20Results%20%20Dr.%20Dina%20S.%20Ocampo.compressed.pdf>
- [8]. Department of Education (2013). Implementing Rules and Regulations IRR of Republic Act 10533 otherwise known as the Basic Education Act of 2013. Retrieved from http://www.deped.gov.ph/sites/default/files/order/2013/DO_s2013_43.pdf
- [9]. Department of Education (2015). Senior High School Applied Tracks Subjects. Retrieved from <http://tipsonphysicaleducation.blogspot.com/2010/12/various-definition-of-research-methods.html>
- [10]. Femz, I. (2012). Assessing the components of research paper article. Singapore: Singapore National University.
- [11]. Fonders, D. (2016). Working on research and citation skills. Canada: University of British
- [12]. Columbia.
- [13]. Fordew, G. (2010). Research Writing: Singapore: Singapore National University.
- [14]. Luistro, A. (2011). The Enhanced K 12 Basic Education Program Rationale. Philippine Education Research Journal. Retrieved March 11, 2019, from perj.wordpress.com/2010/12/07/the-enhanced-k12-basic-education-program-rationale/.
- [15]. McGaghie, W. C.; Bordage, G.; and J. A. Shea (2001). Problem Statement, Conceptual
- [16]. Framework and Research Question. Retrieved on January 5, 2015 from <https://ncu.libguides.com/c.php?g=1013602&p=7661246>
- [17]. Pando, T. (2010). Identifying the Research Skills of Students of Tayaman High School (Master's Thesis: PamantasangLungsod ng Maynila).
- [18]. Parentela, A. (2017). Research Capability Assessment of English Teachers in Quezon National High School.
- [19]. Paris, W. (2013). The Research Content and mandates. Philippines: Mariano Marcos State University Press.
- [20]. Reyes, M. (2015). Research Preparedness of the Teachers of Sta. Cruz, Laguna (Master's Thesis: Laguna State Polytechnic University).
- [21]. Thomas, D. (2013). Establishing Teacher's Research Skills. USA: New York University.
- [22]. Valdez, K. (2014). Appropriation of Research Skills of Students of Marinduque State College (Master's Thesis: Marinduque State College).
- [23]. Wa-Mbaleka, Safary and Gladstone, Ranjith. (2018). Qualitative Research for Senior High School. Oikos Biblios Publishing House Silang, Cavite.